REMARKS

The Official Action mailed March 17, 2010, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on June 15, 2006; November 21, 2007; and September 22, 2009.

Claims 1-44 were pending in the present application prior to the above amendment. The features of dependent claims 4, 8, 12, 16, 20, 24, 28 and 32 have been effectively incorporated into independent claims 1, 5, 9, 13, 17, 21, 25 and 29, respectively, and new claims 45-47 have been added to recite additional protection to which the Applicant is entitled. Accordingly, claims 1-3, 5-7, 9-11, 13-15, 17-19, 21-23, 25-27, 29-31 and 33-47 are now pending in the present application, of which claims 1, 5, 9, 13, 17, 21, 25, 29 and 45 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Paragraph 1 of the Official Action rejects claim 1 as anticipated by WO 03/008515 to Ly (referred to as "Tuan" in the Official Action). Paragraph 3 of the Official Action rejects claims 1-3, 5-7, 9-11, 13-15, 17-19, 21-23, 25-27, 29 and 30-44 as obvious based on Tuan. The features of dependent claims 4, 8, 12, 16, 20, 24, 28 and 32 have been effectively incorporated into independent claims 1, 5, 9, 13, 17, 21, 25 and 29, respectively. Also, the Official Action concedes that "Tuan fails to teach a compound where [R^2] of formula 1 is represented by formula 2" (page 9, Paper No. 20100310). Therefore, the above-referenced rejections are now moot.

Paragraph 12 of the Official Action rejects claims 4, 8, 12, 16, 20, 24, 28 and 32 as obvious based on the combination of Tuan, Thomas, "Light-Emitting Carbazole Derivatives: Potential Electroluminescent Materials," J. Am. Chem. Soc., 2001, 123, pp.

9401-9411, and U.S. Publication No. 2006/0073357 to Brunner. The Applicant respectfully traverses the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2144.04, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some reason to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

As noted in detail above, the features of dependent claims 4, 8, 12, 16, 20, 24, 28 and 32 have been effectively incorporated into independent claims 1, 5, 9, 13, 17, 21, 25 and 29, respectively.

There is no proper or sufficient reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Tuan, Thomas and Brunner or to combine reference teachings to achieve the claimed invention. MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and

asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the features of the present invention.

The Official Action concedes that "Tuan fails to teach a compound where [R^2] of formula 1 is represented by formula 2" (page 9, Paper No. 20100310). The Official Action asserts that "Tuan teaches a mono-substituted carbazole ... while the applicant claims di-substituted carbazole" (page 10, Id.), that "methods used to make di-substituted carbazoles for usage in OLED(s) are known in the art as disclosed by Thomas" (Id.), that "Brunner discloses that the mono bromo carbazole derivatives used in electroluminescent devices can be made in a similar manner" (page 11, Id.) and that "it would have been obvious for synthetic chemist to have made a variety of substituted carbazoles which would include the mono and di carbazole species" (Id.). The Applicant respectfully disagrees and traverses the above assertions in the Official Action.

Thomas discloses di bromo carbazole, and Brunner discloses mono bromo carbazole; however, the claimed general formulas (2), (4), (6) and (104) have a structure that is different from that of bromo. The Applicant respectfully submits that it is not obvious to change Tuan's mono triarylene diamine group carbazole to di triarylene diamine group carbazole on the basis of the teachings of Thomas and Brunner, which relate to bromo.

Further, an effect of the claimed general formulas (2), (4), (6) and (104) is advancement of a thermophysical property. Specifically, the present specification discloses mono substituted carbazole (e.g. paragraph [0150][1]), di substituted carbazole (paragraph [0160]) and a compound including the general formula (6). By comparing the temperatures at which the weight was reduced to be 95% or less of the weight at the beginning of the measurement, i.e. 375°C and 460°C, respectively, it is disclosed

[1] Citations are made in reference to the pre-grant publication of the present application, i.e. U.S. Publication No. 2008/0284328.

that a compound including general formula (6) has a higher heat resistance than that of a mono substituted carbazole. As such, the present inventors have identified a specific effect associated with the claimed general formulas (2), (4), (6) and (104); whereas, the Official Action has not set forth a *prima facie* case obviousness that demonstrates why one of ordinary skill in the art at the time of the present invention would have necessarily achieved the claimed general formulas (2), (4), (6) and (104) based on the teachings of the prior art.

Therefore, the Applicant respectfully submits that the Official Action has not provided a proper or sufficient reason, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Tuan, Thomas and Brunner or to combine reference teachings to achieve the claimed invention.

In the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

New claims 45-47 have been added to recite additional protection to which the Applicant is entitled. The features of claim 45 are similar to those recited in claim 1; however, in claim 45, instead of limiting the compound of R^2, X and Y are limited to a bivalent heterocyclic group. The features of dependent claims 46 and 47 are similar to claims 2 and 3, respectively. For the reasons stated above and already of record, the Applicant respectfully submits that new claims 45-47 are in condition for allowance.

The Commissioner is hereby authorized to charge fees under 37 C.F.R. §§ 1.16, 1.17, 1.20(a), 1.20(b), 1.20(c), and 1.20(d) (except the Issue Fee) which may be required now or hereafter, or credit any overpayment to Deposit Account No. 50-2280.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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